CLAIMS

1. (withdrawn) Apparatus comprising:

an enclosure;

first and second power supplies in the enclosure;

first and second controller boards in the enclosure, each of the first and second controller boards having first and second serial bus controllers thereon;

first and second serial buses, each of the first and second serial buses coupled to both of the first and second serial bus controllers on each of the first and second controller boards;

the first serial bus coupled to the first power supply, the second serial bus coupled to the second power supply.

2. (withdrawn) The apparatus of claim 1 wherein the first and second serial buses are used for exchanging enclosure management and environmental information between the first and second power supplies and the first and second controller boards.

3. (withdrawn) The apparatus of claim 2 wherein the first and second power supplies provide status information to each other, and wherein status information related to the first power supply can be read from the second power supply via the serial bus to which the second power supply is coupled.

4. (withdrawn) The apparatus of claim 3 wherein each of the first and second power supplies includes first and second blowers, and wherein status related to the first and second blowers is shared between the first and second power supplies.

5. (withdrawn) The apparatus of claim 4 wherein the status related to the first and second blowers in the first power supply can be read from the second power supply via the serial bus to which the second power supply is coupled.

6. (withdrawn) The apparatus of claim 5 wherein the enclosure resides in a storage system.

7. (original) A system comprising:

a first module including first and second serial bus controllers;

a first serial bus coupled to the first and second serial bus controllers;

a second serial bus coupled to the first and second serial bus controllers;

a second module coupled to the first and second serial buses;

first and second isolation switches on the first module coupled to the first and second serial buses respectively;

logic on the first module for causing the first and second isolation switches to open when either the first or second serial bus controller suffers a fault, such that the serial buses are isolated from the second module.

8. (original) The system of claim 7 wherein the logic comprises:

a watchdog timer coupled to the first and second serial bus controllers for monitoring the first and second serial bus controllers to ascertain whether the first or second serial bus controller suffers a fault;

a flip flop coupled to the watchdog timer, the clock input of the flip-flop being driven by the watchdog timer such that when the watchdog timer ascertains that either the first or second serial bus controller has suffered a fault, the clock input of the flip-flop is asserted, causing an output of the flip-flop to be asserted;

the output of the flip-flop coupled to the first and second isolation switches such that when the output of the flip-flop is asserted the first and second isolation switches open.

9. (original) The system of claim 8 wherein the output of the flip-flop holds its value so that, when the first and second isolation switches open, a cause can be determined as to why the first and second isolation switches opened.

10. (original) The system of claim 7 wherein the first and second isolation switches power up open.

11. (original) The system of claim 7 comprising:

third and fourth serial bus controllers on the second module;

a third serial bus coupled to the third and fourth serial bus controllers and to the first isolation switches;

a fourth serial bus coupled to the third and fourth serial bus controllers and to the second isolation switches;

such that when the logic on the first module causes the first and second isolation switches to open, the third and fourth serial buses remain functional.

12. (original) The system of claim 11 comprising:

third and fourth isolation switches on the second module coupled to the third and fourth serial buses respectively;

the output of the third and fourth isolation switches coupled to outputs of the first and second isolation switches;

logic on the second module for causing the third and fourth isolation switches to open when either the third or fourth serial bus controller suffers a fault, such that the first and second serial buses remain functional.

13. (original) The system of claim 12 wherein the logic on the second module comprises:

a watchdog timer coupled to the third and fourth serial bus controllers for monitoring the third and fourth serial bus controllers to ascertain whether the third or fourth serial bus controller suffers a fault;

a flip flop coupled to the watchdog timer, the clock input of the flip-flop being driven by the watchdog timer such that when the watchdog timer ascertains that either the third or fourth serial bus controller has suffered a fault, the clock input of the flip-flop is asserted, causing an output of the flip-flop to be asserted;

the output of the flip-flop coupled to the third and fourth isolation switches such that when the output of the flip-flop is asserted the third and fourth isolation switches open.

14. (original) A module comprising:

first and second serial bus controllers;

a first serial bus coupled to the first and second serial bus controllers;

a second serial bus coupled to the first and second serial bus controllers;

first and second isolation switches coupled to the first and second serial buses respectively;

logic for causing the first and second isolation switches to open when either the first or second serial bus controller suffers a fault, such that the serial buses are isolated from a second module to which the module can be coupled.

15. (original) A computer program product comprising:

first and second serial bus controllers;

logic for monitoring first and second serial bus controllers;

logic for controlling first and second isolation switches coupled to first and second serial buses respectively, the first and second serial buses being coupled to the first and second serial bus controllers, the logic for controlling causing the first and second isolation switches to open when either the first or second serial bus controller suffers a fault.

16. (withdrawn) A method comprising the steps of:

providing an enclosure;

providing first and second power supplies in the enclosure;

providing first and second controller boards in the enclosure, each of the first and second controller boards having first and second serial bus controllers thereon;

coupling First and second serial buses to both of the first and second serial bus controllers on each of the first and second controller boards;

coupling the first serial bus to the first power supply, and coupling the second serial bus to the second power supply.

17. (withdrawn) The method of claim 16 including the step of exchanging enclosure management and environmental information between the first and second power supplies and the first and second controller boards via the first and second serial buses.

18. (withdrawn) The method of claim 17 further comprising the step of reading status information related to the first power supply from the second power supply via the serial bus to which the second power supply is coupled.

19. (withdrawn) The method of claim 18 further comprising the steps of:

providing first and second blowers in each of the first and second power supplies;

exchanging status related to the first and second blowers between the first and second power supplies.

20. (withdrawn) The method of claim 19 further comprising the step of reading the status related to the first and second blowers in the first power supply from the second power supply via the serial bus to which the second power supply is coupled.

21. (original) A method comprising the steps of:

providing a first module including first and second serial bus controllers;

coupling a first serial bus to the first and second serial bus controllers;

coupling a second serial bus to the first and second serial bus controllers;

coupling a second module to the first and second serial buses;

coupling first and second isolation switches on the first module to the first and second serial buses respectively;

causing the first and second isolation switches to open when either the first or second serial bus controller suffers a fault, such that the serial buses are isolated from the second module.

22. (original) The method of claim 21 wherein the step of causing comprises the steps of:

monitoring by a watchdog timer the first and second serial bus controllers to ascertain whether the first or second serial bus controller suffers a fault;

when the watchdog timer ascertains that either the first or second serial bus controller has suffered a fault, asserting by the watchdog timer the clock input of a flip-flop, causing an output of the flip-flop to be asserted;

coupling the output of the flip-flop to the first and second isolation switches such that when the output of the flip-flop is asserted the first and second isolation switches open.

23. (original) The method of claim 22 wherein the output of the flip-flop holds its value and further comprising the step of determining why the first and second isolation switches opened by examining the output of the flip-flop.

24. (original) The system of claim 21 wherein the first and second isolation switches power up open.

25. (original) The method of claim 21 further comprising the steps of:

providing third and fourth serial bus controllers on the second module;

coupling a third serial bus to the third and fourth serial bus controllers and to the first isolation switches;

coupling a fourth serial bus to the third and fourth serial bus controllers and to the second isolation switches, such that when the logic on the first module causes the first and second isolation switches to open, the third and fourth serial buses remain functional.

26. (original) The method of claim 25 further comprising the steps of:

coupling third and fourth isolation switches on the second module to the third and fourth serial buses respectively;

coupling outputs of the third and fourth isolation switches to outputs of the first and second isolation switches;

causing the third and fourth isolation switches to open when either the third or fourth serial bus controller suffers a fault, such that the first and second serial buses remain functional.

27. (original) The method of claim 26 wherein the step of causing comprises the steps of:

monitoring by a watchdog timer the third and fourth serial bus controllers to ascertain whether the third or fourth serial bus controller suffers a fault;

when the watchdog timer ascertains that either the third or fourth serial bus controller has suffered a fault, asserting by the watchdog timer the clock input of a flip-flop, causing an output of the flip-flop to be asserted;

coupling the output of the flip-flop to the third and fourth isolation switches such that when the output of the flip-flop is asserted the third and fourth isolation switches open.

28. (original) A method comprising the steps of:

providing first and second serial bus controllers;

coupling a first serial bus to the first and second serial bus controllers;

coupling a second serial bus to the first and second serial bus controllers;

coupling first and second isolation switches the first and second serial buses respectively;

causing the first and second isolation switches to open when either the first or second serial bus controller suffers a fault, such that the serial buses are isolated from a second module to which the module can be coupled.